Independent Verification & Validation Program	**Internal Quality Audits**	**IVV 17** **Version: AC** **Effective Date:** **April 28, 2016**

DOWNLOADED AND/OR HARD COPY UNCONTROLLED
Verify that this is the correct version before use.

AUTHORITY		DATE
Kenneth Vorndran (original signature on file)	IMS Representative	04/28/2016
Jeffrey Northey (original signature on file)	IMS Manager	04/26/2016
Jeffrey Northey (original signature on file)	Process Owner	04/26/2016

REFERENCES	
Document ID/Link	Title
ISO 9001:2008	International Organization for Standardization: Quality Management Systems - Requirements
ISO 17020:2012	International Organization for Standardization: Conformity assessment – Requirements for the operation of various types of bodies performing inspection
IVV QM	NASA IV&V Quality Manual
IVV 05	Document Control
IVV 14	Corrective and Preventive Action
IVV 16	Control of Records
NPR 1441.1	NASA Records Management Program Requirements

If any process in this document conflicts with any document in the NASA Online Directives Information System (NODIS), this document shall be superseded by the NODIS document. Any external reference shall be monitored by the Process Owner for current versioning.

1.0 Purpose

This system level procedure (SLP) defines the NASA IV&V internal audit program. This SLP describes how internal audits of the NASA IV&V Management System (IMS) shall be planned, conducted, and reported to ensure that:

- The IMS is compliant with the requirements of the International Organization for Standardization (ISO) 9001:2008 Standard.
- The IMS is compliant with the requirements of the International Organization for Standardization (ISO) 17020:2012 Standard.
- The IMS effectively implements the Quality Policy and conforms to the NASA IV&V Quality Manual (QM).
- Documented plans, SLPs, Work Instructions (WIs), forms, templates, and supporting documents reflect current NASA IV&V operations, responsibilities, and products.
- Personnel, processes, products, and services comply with documented requirements.
- Corrective and preventive actions are systematically identified to improve IMS processes and performance.

2.0 Scope

This SLP applies to the IMS.

3.0 Definitions and Acronyms

Official NASA IV&V roles and terms are defined in the Quality Manual. Specialized definitions identified in this SLP are defined below.

3.1 Accolade

An accolade cites an exemplary system, process, or behavior.

3.2 Audit Package

The Audit Package is provided to each member of the Audit Team prior to the start of each internal quality audit, and contains content related to the area(s) the Audit Team member will be auditing in that particular audit. The Audit Package contains (but is not limited to):

- Areas of concentration identified in the last four internal audits (previous 24 months).
- CARs/PARs opened in the past 36 months.
- Audit notes from the last two internal audits (previous 12 months).
- Guide sheet: any specific themes, general focus areas, key questions, etc. for that particular internal audit. These are likely to be broadly applicable (i.e. they apply to all audit areas, not just one or two SLP's like: IVV 09-4, IVV 06-1, etc.).

3.3 Audit Report

The Audit Report is a report compiled and completed by the Lead Auditor at the end of an internal audit. It includes input from all Auditors. The Audit Report covers all phases and aspects of the internal audit, including (but not limited to) in- and out-brief attendance, findings, schedules, auditor notes, and resulting corrective or preventive actions.

3.4 Audit Team

The Audit Team is comprised of the Lead Auditor, Auditors, and others (such as audit observers) for the purpose of conducting IMS internal audits.

3.5 Auditee

An Auditee is any person being audited.

3.6 Auditor

An Auditor is a NASA IV&V civil service or contract employee who has been formally trained in audit methods and objectives or possesses sufficient audit experience or on-the-job training as determined by the IMS Manager.

3.7 Auditor Repository

The Auditor Repository is used by internal Auditors to record, store, and report internal audit findings and auditor notes. It is located on the Enterprise Content Management (ECM) System.

3.8 IMS Modifications Needed Spreadsheet

The IMS Modifications Needed Spreadsheet is a list of proposed editorial changes resulting from audit observation findings and/or day-to-day activities. It is located on the ECM System.

3.9 Lead Auditor

A Lead Auditor is a NASA IV&V civil service or contract employee who has been formally trained and certified in an accredited Lead Auditor class, or possesses sufficient audit experience or on-the-job training as determined by the IMS Manager.

3.10 Nonconformance

A nonconformance represents a lack of compliance with a specified process or procedure (requirement) associated with the IMS, or a nonconforming product in the IMS. For the purposes of this SLP, a nonconformance can be categorized into one of two levels of severity.

3.10.1 Major Nonconformance

A major nonconformance is characterized by one or more of the following:

- A lack of a documented procedure, or a documented procedure that is not being implemented consistently.
- An issued nonconforming product that has a significant effect on customer success, safety, or resources.
- A series of minor nonconformances that indicate an overall IMS deficiency that may have an adverse effect on overall product quality or customer satisfaction.

3.10.2 Minor Nonconformance

A minor nonconformance is an issued nonconformance that has little or no effect on the customer.

3.11 Observation (OBS)

An observation is used to capture data points where a potential nonconformance, or an opportunity for improvement exists (i.e., improved effectiveness or efficiency). Observations may include suggested editorial corrections to procedures.

3.12 Acronyms

3PAO	Third Party Assessment Organization
CAR	Corrective Action Request
ECM	Enterprise Content Management
IMS	NASA IV&V Management System
ISO	International Organization for Standardization
NODIS	NASA Online Directives Information System
NPR	NASA Procedural Requirements
OBS	Observation
PAR	Preventive Action Request
QM	Quality Manual
SCO	Strategic Communications Office
SLP	System Level Procedure
WI	Work Instruction

4.0 Process

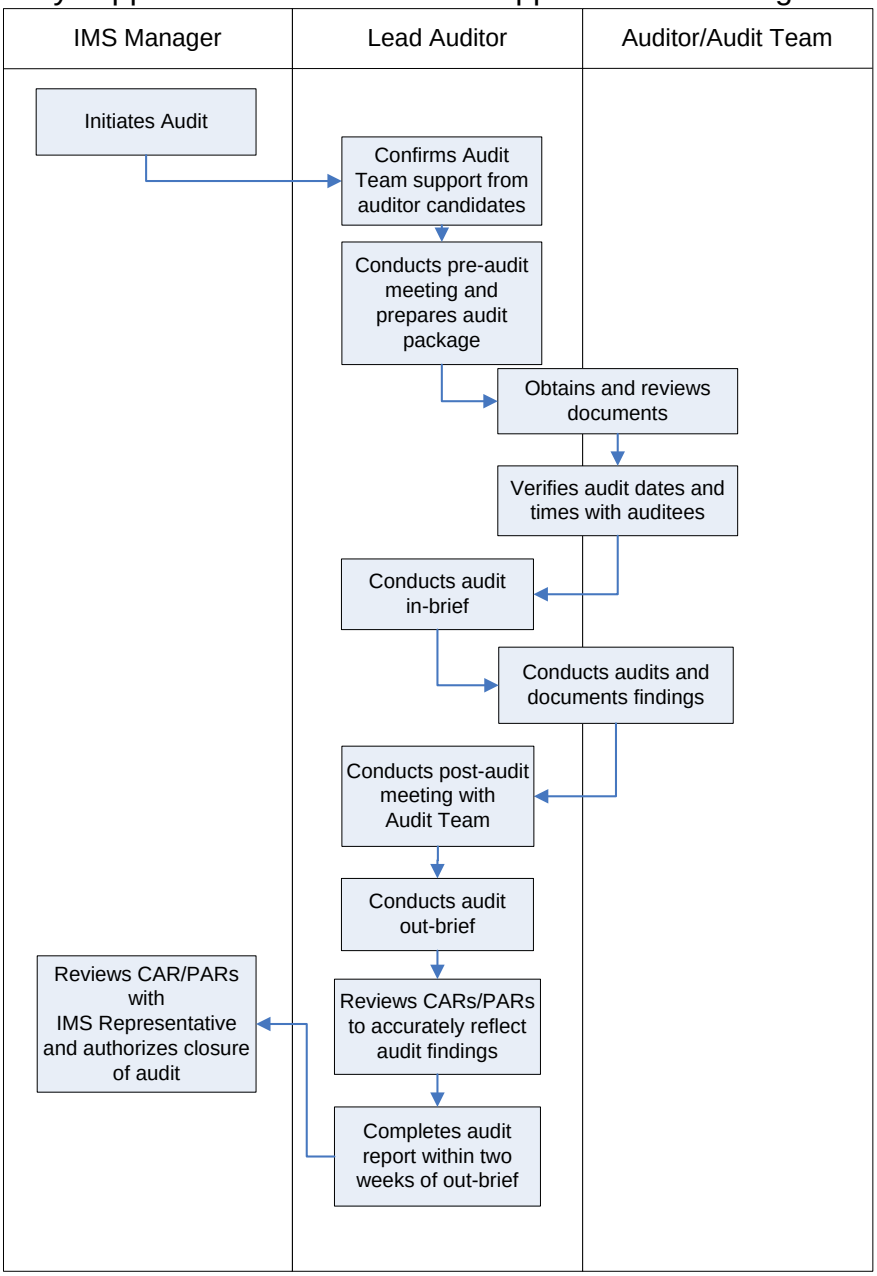
4.1 Audit Program Planning

The IMS Manager shall develop and maintain a master audit schedule each fiscal year. The master audit schedule will be provided to the Strategic Communications Office (SCO) Lead during the office execution planning and serve as a baseline schedule of the internal audit activities for that fiscal year. Audit Team fiscal year resource requirements will be documented in the SCO Execution Plan, and approved during NASA IV&V Program execution planning. The master audit schedule will plan for all IMS SLPs/WIs to be audited within a 12-month period (and shall ensure that any active 3PAO projects are audited within a 12-month period). However, modifications to the master audit schedule may be made to accommodate greater or lesser frequency and depth of audits based on the results of previous audits (internal or external), changes in the organizational work environment, and areas of potential risk. The IMS Manager shall record modifications to the master audit schedule in the master audit schedule change log.

The IMS Manager shall identify auditor training needs. This may include training for new auditors, refresher training for existing auditors, and training on new versions of standards (e.g. ISO 9001). In coordination with supervisors and the IMS Manager, the NASA IV&V Training Coordinator shall ensure that auditors receive formal training in audit methods and objectives as needed to support the internal audit program.

4.2 Audit Activities

Any supplemental information will appear after the diagram.



In collaboration with the IMS Manager, the Lead Auditor confirms auditor

support (this includes checking with Supervisors and Office Leads) from auditor candidates for the Audit Team.

The Lead Auditor shall hold a pre-audit meeting (this may be conducted virtually or via e-mail) with the Audit Team to discuss the audit plan and evaluate the scope of the audit to identify potential modifications. These modifications, if any, will be proposed to and authorized by the IMS Manager.

Each Auditor shall review the policies, plans, IMS documents, previous audit results and associated CARs/PARs that are applicable to the Auditee's responsibilities. The Auditor shall determine whether the reviewed materials adequately address all applicable ISO requirements. Additionally, the Auditor shall review previous audit results, and any CARs and/or PARs associated with the functional area being audited, and validate the effectiveness of the action/s taken to correct or prevent nonconformities. The Auditor shall interview appropriate personnel and determine whether actual practices conform to the documented requirements of the policies, plans, SLPs, WIs, templates, supporting documents, and forms.

The Auditor shall document the interviews, objective evidence reviewed, findings and notes in the Auditor Repository. The Lead Auditor shall categorize all findings as major/minor nonconformances, observations, or accolades. The Lead Auditor shall hold a post-audit meeting with the Audit Team to discuss findings and any other noteworthy information from the audit. All nonconformance and observations that are not editorial shall be documented by the Lead Auditor (in collaboration with the IMS Manager) per IVV 14, *Corrective and Preventive Action*.

The Lead Auditor shall ensure all audit observation findings that are editorial will be documented in the *IMS Modifications Needed* spreadsheet, and incorporated per IVV 05, *Document Control*.

The Lead Auditor shall reconcile any disagreements between Auditors and Auditees. When necessary, the Lead Auditor shall submit disagreements to the IMS Manager for reconciliation.

The IMS Manager shall review the Audit Report, as well as any CARs/PARs, for clarity and completeness. The IMS Manager shall

authorize closure of the Audit only after associated findings are reviewed with the IMS Representative and CARs/PARs are opened in the CAR/PAR System.

5.0 Metrics

Any metrics associated with this SLP are established and tracked within the NASA IV&V Metrics Program.

6.0 Records

The following records will be generated or updated and filed in accordance with this SLP and IVV 16, *Control of Records*, and in reference to NASA Procedural Requirement (NPR) 1441.1, *NASA Records Management Program Requirements*.

Record Name	Original	Vital	Responsible Person	Retention Requirement	Location
Auditor Repository	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
Audit Report	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
Master Audit Schedule	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
CAR/PAR	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System (TrackWise prior to March 2011)
IMS Modifications Needed Spreadsheet	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System
In-Brief Slides	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System

VERSION HISTORY				
Version	Description of Change	Rationale for Change	Author	Effective Date
Basic	Initial Release		John Griggs IT/204	08/26/1998
A – M	Version information older than 7-year retention period relocated to Version History Overflow Document		Various	09/11/1998 – 11/15/2007
N	Updated to remove audit checklist and include editorial spreadsheet		Stephanie Ferguson	09/17/2008
O	Changed “IV&V Facility” to “IV&V Program”		Stephanie Ferguson	12/19/2008
P	Updated definitions of major/minor nonconformances and observations		Stephanie Ferguson	01/25/2010
Q	Revised definition of major nonconformance		Stephanie Ferguson	04/02/2010
R	Added reference document precedence statement		Sara Cain	07/29/2010
S	Change Process flow to reflect actual process for Training and Supervisor Approval		Robyn Budd	09/15/2010
T	Update Section 4.1, Audit Master Schedule to denote that all (including new) SLPs/WIs are audited within 12 months		Natalie Alvaro	03/30/2011

VERSION HISTORY				
Version	Description of Change	Rationale for Change	Author	Effective Date
U	Update roles. Replace Audit Database with Auditor Repository		Natalie Alvaro	10/20/2011
V	Update Scope. Update Definitions: IMS Modifications spreadsheet, and made observation its own entity as it is not necessarily a type of nonconformance. Streamline editorial changes		Natalie Alvaro	05/24/2012
W	Clarify Auditor responsibility of validating the effectiveness of CAR/PARs		Natalie Alvaro	07/31/2012
X	Add review of individual audit scope in pre-audit meeting. Add responsibility of auditors to confirm supervisor's approval.	CAR/PAR: 2012-C-371 and 2012-P-367	Natalie Alvaro	01/03/2013
Y	Removed verbiage and references to Form 1005, *Finding Report*. Removed CAR/PAR entry details and referred to IVV 14.	This form is very rarely needed or used. Email or similar methods can easily be used in place of the form. Removal of CAR/PAR details reduces duplication and thus reduces maintenance and chance of error.	Richard Grigg	12/12/2013

VERSION HISTORY				
Version	Description of Change	Rationale for Change	Author	Effective Date
Z	Modify the definition of "Audit Package" to include more details about what content is required. In section 4.2, clarify criteria for closing Audit.	PAR 2014-P-401: "… including exactly from where the information is collected and how far back to go for comments and notes. This can help ensure that the appropriate type and amount of information is considered (including previously closed CARs/PARs, areas of concentration, etc.)."	Jeffrey Northey	07/14/2014
AA	Replace “Audit Manager” with “IMS Manager” since “Audit Manager” is not defined. 3) Clarify who may be a NASA IV&V Lead Auditor. 4) Refer to IVV 05 for handling of editorial findings. 5) Add Post-audit team meeting to flow and to text.	PAR 2014-P-417: 3) Can anyone be a Lead Auditor? Add "and certified"; discretion of "Audit Manager" remains; experience/ OJT could be acceptable in certain cases. 4) IVV 17 "steps on" IVV 05 wrt Mod-Needed spreadsheet. 5) Post-audit team meeting not mentioned in IVV 17.	Jeffrey Northey	01/29/2015

VERSION HISTORY				
Version	Description of Change	Rationale for Change	Author	Effective Date
AB	Many changes to add clarity and correct inconsistencies between the document and actual practice.	Updates in response to PAR #2015-P-440. These changes add clarity and correct inconsistencies between the document and actual practice.	Jeffrey Northey	01/15/2016
AC	Update to explicitly include scope/ activities required by FedRAMP. Expand training guidance.	To address CAR #2016-C-454. These changes mitigate the risk that audit activities required for FedRAMP compliance would be overlooked.	Jeffrey Northey	04/26/2016